

III. REMARKS

The Office Action dated October 18, 2006, has been received and carefully noted. The amendments made herein and the following remarks are submitted as a full and complete response thereto.

Claims 1-15 and 22-23 are currently pending, and claims 14-15 and 22-23 are withdrawn.

At this time, the specification and claim 1 are amended, and claims 16-21 are canceled. Support for the amendments can be found in the specification and in the claims as originally filed. For example, claim 1 has been amended to incorporate the subject matter of allowable claims 20 and 21. As such, Applicants believe that no new matter is added.

Applicants thank the Examiner for indicating that claims 20 and 21 contain allowable subject matter. Applicants agree with the Examiner's assertion that "the prior art does not teach or suggest a hydrogen storage material comprising palladium platelets having the claimed dimensions mixed with core particles or magnesium having a shell or coating of palladium formed thereon" (Office Action, page 9, lines 7-11). As Applicants have amended independent claim 1 to incorporate the subject matter of claims 20 and 21, Applicants respectfully request reconsideration and withdrawal of all rejections. Applicants note that all remaining, non-withdrawn claims depend from independent claim 1.

The Examiner objected to the specification for the following informalities: (1) the reference in paragraph [0030] to "FIG. 1" and (2) the lack of brief description for Figure 18. Applicants have amended the specification to correct the informalities, and as

such, Applicants request reconsideration and withdrawal of the objections to the specification.

Claims 1, 4, 6-7, 11, 13 and 16 were rejected under 35 U.S.C. § 102(e) over Masel et al. (U.S. Patent Application Publication No. 2003/0198852). Applicants traverse the rejection.

Present claim 1 is directed to a “hydrogen storage material comprising metal nanoparticles that are a) a mixture of nanometer scale platelets and nanometer scale equiaxial particles and/or b) a metal core covered by a metal shell or metal coating, wherein the metal core is Mg or an alloy containing Mg, and wherein said platelets comprise nanometer scale Pd particles that have a thickness of about 1 nm to about 200 nm and a face dimension of about 10 nm to about 1000 nm, an aspect ratio (face diameter divided by thickness) of the nanometer scale platelets ranges from about 10 nm to about 100 nm.” (emphasis added). Claims 4, 6-7, 11 and 13 depend from independent claim 1, and claim 16 has been canceled.

In contrast, Applicants submit that Masel et al. merely discloses “catalysts for use with direct organic fuel cells” which “include nanoparticles of metals,” wherein the “[m]etals believed useful for the metal particles and the coating layers or islands in catalysts of the invention include Pt, Pd, Ru, Re, Ir, Au, Ag, Co, Fe, Ni, Y, and Mn” (Masel et al., paragraphs [0050] to [0051]) (emphasis added).

Applicants submit that Masel et al. fails to teach or suggest a hydrogen storage material comprising a “metal core” of “Mg or an alloy containing Mg,” or platelets comprising nanometer scale Pd particles of the claimed thickness of about 1 nm to

about 200 nm, face dimension of about 10 nm to about 1000 nm, and aspect ratio of about 10 nm to 100 nm (claim 1).

As Masel et al. fails to teach or suggest all of the elements of independent claim 1 and dependent claims 4, 6-7, 11, and 13, Applicants request reconsideration and withdrawal of the rejection under 35 U.S.C. § 102(e) over Masel et al.

Claims 3 and 5 were rejected under 35 U.S.C. § 103(a) over Masel et al. Applicants traverse the rejection.

As discussed above, Applicants submit that Masel et al. does not teach or suggest all of the elements of independent claim 1. Claims 3 and 5 depend from independent claim 1, and as such, Applicants submit that Masel et al. does not teach or suggest dependent claims 3 and 5.

As Masel et al. fails to teach or suggest all of the elements of claims 3 and 5, Applicants request reconsideration and withdrawal of the rejection under 35 U.S.C. § 103(a) over Masel et al.

Claims 2, 8-10, 12, and 17-19 were rejected under 35 U.S.C. § 103(a) over Masel et al. in view of Snow et al. (U.S. Patent No. 6,589,312). Further, claims 1-19 were rejected under 35 U.S.C. § 103(a) over Snow et al. in view of Masel et al. Applicants traverse the rejections.

Claims 2-13 depend from independent claim 1, and claims 14-15 have been withdrawn, and claims 16-19 have been canceled.

As discussed above, Applicants submit that Masel et al. does not teach or suggest the presently claimed invention. Applicants submit that Snow et al. does not satisfy the deficiencies of Masel et al. Rather, Applicants submit that Snow et al.

merely discloses “nanoparticles of hydride-forming materials” (Snow et al., col. 9, line 23). Although Snow et al. discloses that the nanoparticles can be “pure, alloyed or composite metal” (Snow et al., col. 9, line 5), it fails to teach or suggest a “metal core covered by a metal shell or metal coating, wherein the metal core is Mg or an alloy containing Mg” (present claim 1) (emphasis added). Rather, Snow et al. merely discloses that the “nanomaterials could be coated or partially coated by gas or liquid phase processes” and that “[d]ry coatings such as, but not limited to alkyl silanes and alkyl thiols” can be used (Snow et al., col. 10, lines 7-10) (emphasis added). Further, Applicants submit that Snow et al. does not teach or suggest “platelets [which] comprise nanometer scale Pd particles that have a thickness of about 1 nm to about 200 nm and a face dimension of about 10 nm to about 1000 nm, an aspect ratio (face diameter divided by thickness) of the nanometer scale platelets ranges from about 10 nm to about 100 nm” (present claim 1).

For at least the above reasons, Applicants request reconsideration and withdrawal of the rejection of claims 2, 8-10, 12, and 17-19 under 35 U.S.C. § 103(a) over Masel et al. in view of Snow et al. and the rejection of claims 1-19 under 35 U.S.C. § 103(a) over Snow et al. in view of Masel et al.

IV. **CONCLUSION**

Applicants respectfully submit that this application is in condition for allowance and such action is earnestly solicited. If the Examiner believes that anything further is desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact Applicants' undersigned representative at the telephone number listed below to schedule a personal or telephone interview to discuss any remaining issues.

In the event this response is not timely filed, the Applicants hereby petition for an appropriate extension of time. The fee for this extension, along with any other additional fees which may be required with respect to this response, may be charged to Deposit Account No. 01-2300, referencing Attorney Docket No. **025756-00003**.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Charles M. Marmelstein', written over a horizontal line.

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